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Memorandum

From: Steve Willis
To: Wayne Miller
Date: May 18, 2015
Subject: Site visits to observe EBR well drilling activities at Former Williams AFB Site ST012.

Wayne:

This memo summarizes my visits to Site ST012 conducted between May 3 and May 18, 2016. The purpose of the site visits was to monitor drilling and well installation activities and record my observations, particularly related to the condition of drill cuttings.

May 3, 2016

Upon arriving at the site, I signed in at the site office trailer then proceeded to the drill site in the above-ground tank area south of the fenced SEE treatment zone, where I met Kyle Keegan from AMEC. Yellow Jacket Drilling was onsite. Drilling activities were stopped in well UWBZ32-INJ/LSZ47-INJ, located east of the large tank, at a depth of 95' bgs while the drillers retrieved supplies and took a short lunch. I discussed the drilling schedule with Kyle and viewed the first 95' of drill cuttings. Drilling resumed after lunch and was halted at about 3 pm at a depth of 156'.

- Cuttings from the bottom of the borehole were slightly moist, but did not indicate groundwater had been reached. There was no noticeable indication of contamination in the upper 156' of cuttings (i.e., no noticeable odors or staining).

May 7, 2016

I arrived at the site after lunch. Drilling had just been completed in boring UWBZ33-INJ/LSZ48-INJ, located north of the large tank, to a depth of approximately 226'.

- According to Kyle, the cuttings from below the water table were "very hot"; he measured a temperature of about 190° F below 170' bgs.
- The NAPL dye test conducted on cuttings between 170' and 172' showed that NAPL was likely.
- Kyle stated that PID readings were "high" and there was a noticeable hydrocarbon odor in the UWBZ cuttings.
- I noted that cuttings from the LPZ and LSZ did not contain odors, and Kyle confirmed that he saw no evidence of NAPL in the lower cuttings.

May 11, 2016

I arrived at the site at approximately 12:40 pm. Yellow Jacket had just complete drilling of well LSZ44-INJ, located north of the SEE treatment area between perimeter monitoring wells W36 and W34.

- Kyle stated that the cuttings did not appear to be contaminated.
- PID readings were very low and there were no odors in the cuttings.
- I observed the cuttings and agreed that they appeared relatively free of contamination, with no noticeable staining or odors.

May 18, 2016

I arrived at the site at 9:30 am and proceeded to the drill site on the Army property west of the SEE treatment area. Drilling of well LSZ50-INJ was in progress, with 206' of cuttings available to view.

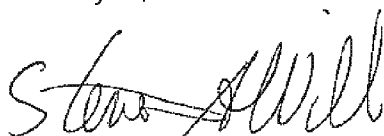
- Kyle stated he had not detected any significant petroleum odors and PID readings were very low.
- I checked the cuttings and confirmed there were no noticeable odors or staining in the available 206' of cuttings.
- Yellow Jacket continued drilling to 216' and retrieved the next 10' of cuttings from the Rotasonic corebarrel.
- At 208', I noticed a significant hydrocarbon odor in the cuttings.
- Kyle confirmed that the odors continued throughout the cuttings to 216'.
- At 212', the PID showed 960 ppm, and the dye test showed the likely presence of NAPL.
- The boring continued to a total depth of 223'.
- Cuttings between 218' – 223' had a noticeable hydrocarbon odor.
- At 222', the PID measured 800 ppm.
- The dye test showed the likely presence of NAPL at 222'.

Kyle stated that they will drill the next well on the Army property near perimeter monitoring well W11, then will likely start drilling onsite. The wells east of Sossaman Rd. will not be drilled until they can re-open the sidewalk on the west side of Sossaman, as the airport does not want to have the sidewalks on both sides of the road closed at the same time. Ulyses Avenue north of the site may be re-opened this weekend.

I left the site at approximately 1:15 pm.

Please contact me if you have comments or questions regarding this memo.

Thank you,

A handwritten signature in black ink, appearing to read "Steve Will". The signature is written in a cursive, flowing style with some loops and a long horizontal stroke at the end.

SITE PHOTOS



Photo 1. Drilling well LSZ44-INJ in the cell phone lot north of the SEE treatment area



Photo 2. Drilling well LSZ50-INJ on the Army property west of the SEE treatment area



Photo 3. Kyle Keegan collecting lab samples from well LSZ50-INJ



Photo 4. Cuttings from the Cobble Zone at 146' in well LSZ50-INJ



Photo 5 Cuttings from the Upper Water Bearing Zone at 184' in well LSZ50-INJ



Photo 6 Cuttings from the LSZ at the bottom of well LSZ50-INJ